Learjet 60 / 60XR OPS Limits / Facts FC60

AIRSPEED LIMITS		FUEL LIMITS	
M_{MO} up to FL370	.81 MACH	Fuel Jet A, A-1, B, JP5/8	Fuel Anti-Ice Not Rq
M_{MO} Mach Trim A/P Inop	.77 MACH	Max OUT OF BALANCE T/O - LAND	200 LBS
V_{MO} up to 8,000 ft	300 KIAS	Max OUT OF BALANCE INFLIGHT	500 LBS
V_{MO} 8,000-20000 Ft	340 KIAS	LOW FUEL PRESSURE LIGHT	2.75 PSI
SPOILERS INOP	38000 FT	LOW FUEL LIGHT (EITHER WING)	410 LBS
V_{LE}	260 KIAS	Fuse. Tank Grav. Trans. Unusable	350 LBS
V_{LO}	200 KIAS	Aviation Gas Approved	Prohibited
V_{FE} (flaps- 8°)	250 KIAS	POWER PLANT LIMITATIONS	
V_{FE} (flaps- 20°)	200 KIAS	Max N1 APR/MCT/MCR/&T/O	102%
V_{FE} (flaps°- 40°)	165 KIAS	Max N2 APR/MCT/MCR/&T/O	102%
V_{MCA} Flaps 8°	120 KIAS	N1/N2 Transient for 20 SECONDS	104%
V_{MCA} Flaps 20°	110 KIAS	ENG COMP MUST BE IN AUTO	Exc. Emergency
V_{MCG} Rudder Boost On/Off (INOP)	95 KIAS/116KIAS	Max Idle N2 GROUND / INFLIGHT	52% N_2 / 65% N_2
TURB AIR PENETRATION	250 KIAS/.73 MACH	APR & TAKEOFF POWER LIMITS	5 MINUTES
Max DEMO CROSS WIND	29 Knots	ITT LIMITS / BRAKE LIMITS	
Max CROSS WIND w/o Spoil.	25 Knots		
Max TAIL WIND	10 Knots	MAX Temperature - START	950° ITT
Max TIRE SPEED	182 Knots	MAX TRANSIENT TEMP (20 Sec)	825° ITT
RWY water/slush contamination	¾ in. (19 mm)	MAX CONTINUOUS /REC	785° ITT
WEIGHT AND BALANCE		BRAKE ENERGY EXCEEDED LIMIT	20min / Visual Insp.
Max RAMP WEIGHT	23,750 Pounds	GEAR / BRAKE AIR PRESSURE	1800-3000 PSI
Max. CERT T/O WEIGHT	23,500 Pounds		
Max. CERT LANDING WEIGHT	19,500 Pounds		
Max. ZERO FUEL WEIGHT	17,000 Pounds	HYDRAULIC & ELECTRICAL SYSTEM LIMITS	
Max. T/O Without Anti-Skid	18,500 Pounds	Pressure Relief Valve Opens	1750 PSI
		Accumulator Pre Charge	750 - 850 PSI
LOAD FACTORS		Hydraulic Fluid for Aux. Pump	.4 GAL
FLAPS UP	+3G TO -1G	Emergency Air Pressure	1800-3000 PSI
FLAPS DOWN	+2G TO 0G	Auxillary Hyd Pump	3 min. on / 20 min. off
OIL SYSTEM LIMITS		BATTERIES	24 VDC
MAX Oil Temperature	143°C	ENGINE GENERATORS	28 VDC
OIL Pres. Green Arc (Normal)	36-80 PSI	GENERATOR GROUND LIMIT	325 AMPS
Check Oil Level after Landing within:	10 Minutes of eng. shutdown	GENERATOR AIRBOURNE LIMIT	400 AMPS
Engine Oil Types	Type II / Mobil 254	EMER BATTERY 1 EMER BATTERY 2	3.1 HRS 99.2 HRS
OIL CAPACITY (RESERVOIR)	1.95 US GAL.	60 XR EMER BATTERY 1 EMER BATTERY 2 EMER BATTERY 3	4.6 HRS 1.5 HRS 1.3 HRS

Learjet 60 / 60XR OPS Limits / Facts FC60 (Continued)

PRESSURIZATION LIMITS		ANTI ICE	
Press switches from Auto to Man (Press Sys & Fault Lghts). If in Manual Mode	8,600' ± 250' 8,750' ± 250'	Takeoff: Anti Ice On prior to flight into visible moisture and SAT	10°C or below NAC HEAT- ON
Emer Pres Sys Activates Auto Shed & Emer Pres Lights	9,500' ± 250'	In Flight: Anti Ice On prior to flight into visible moisture and RAT	10°C or below NAC HEAT- ON
Cabin Alt Hi Light/Horn (mute)	10,100' ± 250'	ALCOHOL LIMITS	
Cab Alt. Lim Limits Cabin to	13,700' ± 500'	Type of Alcohol	Methanol O-M-232
O_2 Masks Drop/Emer Lights On	14,500' ± 750'	Reservoir Capacity	2.35 GAL
Max Differential Pressure	9.8 PSIG	System Duration Windshield Only	45 minutes
Max Operation Manual Mode	8000 Feet	ANTI-ICE LIMITATIONS	
Freon Cooling System T/O & Land	OFF or Cabin Manual Mode Full Cold	NACELLE HEAT ENGINES OFF MAX	5 SECONDS
STARTER DUTY CYCLE		NACELLE HEAT SAT +15°C MAX	30 SECONDS
Failure After 1st Attempt	3 minutes	IN-FLIGHT NACELLE HEAT REQ.	10°/-40°C 2 minutes prior to entering icing
Failure After 2nd Attempt	15 minutes	WING & STAB HEAT (Amps/Lgt/ITT)	5sec max / 3 minute wait before retest.
Failure After 3rd Attempt	30 minutes	WINDSHIELD HEAT LIGHT Grnd/Air	250°C / 345°C
GPU MIN / MAX AMPS	500 AMPS - 1500 AMPS	MAX N1 NACELLE HEAT USAGE	65% N_1
GPU CONNECTED TO A/C	1 BAT ON	STATIC DISCHARGE WICKS	19 Total / 14 Req.
GPU REQ Ambient Temp	0°C and below	THRUST REVERSERS LIMITATIONS	
FIRE PROTECTION / OXYGEN		MAX CONTINUOUS OPERATION	5 MINUTES
Fire-Extinguishing Agent	Halon	NOSE GEAR	GRND CONTACT
Fire Bottle Gauge Pressure	600 PSI @ 70°F	HYDRAULICALLLY ACTIVATED	ELEC. CONTOL
OXYGEN PRESSURE	1550-1850 psig	LIMITED TO IDLE	Below 50 KIAS
CREW MASKS NOT APPROVED ABOVE CABIN ALTITUDE	40,000 Feet	T/R USE TO BACK UP AIRCRAFT	PROHIBITED
PASS MASK NOT SUFFICIENT ABOVE CABIN ALTITUDE	34,000 Feet	PAVED SURFACES	REQUIRED
PROLONGED PASS USAGE NOT RECOMMENDED ABOVE CABIN ALT.	25,000 Feet		
OPERATIONAL LIMITS		MISC LIMITATIONS	
MAX Altitude	51,000 Feet	CENTER OF GRAVITY	-4% TO 25% MAC
Temperature	+50 / -54°C	NO INTENTIONAL STALLS	ABOVE 18,000 feet
MAX Takeoff Altitude (PA)	13,700 Feet	OPERATIONAL TRIM CHECKS	FIRST FLIGHT!
MAX Depth of Water or Slush on the Runway	¾ inch	AUTOPILOT USE WITH "RED TRIM" LIGHT ILLUMINATED	PROHIBITED
Do not Takeoff or Land with the:	Cabin Pressurized	YAW DAMPER USE DURING TAKEOFF AND LANDING	DO NOT USE

Engine Failure During Takeoff Below V_1 Speed

1. Wheel Brakes - Apply
2. Thrust Levers – IDLE
3. Spoilers – EXT

Engine Failure During Takeoff Above V_1 Speed

1. Rudder and Ailerons – As Required for Directional Control
2. Accelerate to V_R. Keep nose wheel on the runway.
3. Rotate at V_R; Climb at V_2.
4. Positive Rate of Climb Established – Gear Up
5. Clear of Obstacles – V_2+20, Flaps Up

Learjet 60XR Difference:

5. Clear of Obstacles – V_T, Flaps Up

Engine Failure During Approach

1. Control Wheel Master (MSW) – Press & Release
2. Thrust Lever (operative eng) – Increase as Required
3. Flaps – 20° Max
4. Airspeed – 1.3 V_S (Flaps 20°) Min

Engine Fire - Shutdown

Affected engine:

1. Thrust Lever – IDLE (unless a critical thrust situation exists)
2. *If fire continues more than 15 seconds or there are other indications of fire:
   a. Thrust Lever – CUTOFF
   b. ENG FIRE PULL Handle – Pull
   c. ENG EXT ARMED Light – Press One

Immediate Engine Airstart (N_2 above 25% N_2)

1. Thrust Lever - IDLE
2. IGNITION – On

CABIN ALT HI Light Cabin Altitude Warning Horn of Cabin Altitude Exceeds 10,000Ft (Emergency Descent)

NOTE: CABIN ALT HI warning light installed only on aircraft 60-271 & subsequent and prior aircraft modified by SB 60-31-1 or SB 60-31-2.

1. Crew Oxygen Masks – Don & Select 100% Oxygen
2. Thrust Levers – IDLE
3. Autopilot - Disengage
4. Spoiler - EXT
5. Descend at M_{MO}/V_{MO}, but not below minimum safe altitude.
6. PASSENGER OXYGEN – DEPLOY

CABIN FIRE Light or Cabin/ Cockpit Fire, Smoke or Fumes

1. Crew Oxygen Masks – Don & Select 100% Oxygen
2. Smoke Goggles – Don
3. EMER DEPRESS – Lift Guard & Press
4. Pilot and Copilot NORM MIC/OXY MIC Switches – OXY MIC

Overspeed Recovery – Overspeed Horn Sounds

1. Thrust Levers – IDLE
2. Autopilot - Disengage
3. Identify aircraft pitch & roll attitude.
4. Wings - Level
5. Elevator & Pitch Trim – nose Up, As Required

If Mach or airspeed is severe, or if pitch and/or roll attitude is extreme or unknown:

6. LANDING GEAR – DN (do not retract)

Pitch Axis Malfuntion

1. Control Wheel Master (MSW) – Press & Hold
2. Attitude Control – As Required
3. Thrust Levers – As Required
4. PITCH TRIM (pedestal) – OFF

Roll of Yaw Axis Malfunction

1. Control Wheel Master (MSW) – Press & Hold
2. Attitude Control – As Required

If control force continues:

3. Airspeed - Reduce

Emergency Braking

1. EMER BRAKE Handle – Pull Out of Recess
2. EMER BRAKE Handle – Push Downward

Emergency Evacuation

1. Stop the aircraft.
2. PARKING BREAK – Set
3. Thrust Levers – CUTOFF
4. EMER DEPRESS – Lift Guard & Press

Auxiliary Power Unit (APU):

   a. STOP – Press
   b. MASTER - Press

5. Notify controlling agency.
6. *IF ENGINE FIRE IS SUSPECTED:
   a. Applicable ENG FIRE PULL Handle – Pull
   b. Either ENG EXT ARMED Light – Press
   c. Other ENG FIRE PULL Handle – Pull
   d. BATTERY 1 & 2 – OFF
   e. EMER BAT 1, 2 & 3 (if installed) – OFF
   f. Evacuate the aircraft.
7. *If an engine fire not suspected:
   a. Both ENG FIRE PULL Handles – Pull
   b. BATTERY 1 & 2 – OFF
   c. EMER BAT 1, 2 & 3 (if installed) - OFF
   d. Evacuate the aircraft.

Stall Warning Activates

1. Lower the pitch to reduce the angle of attack.
2. Thrust Levers – Takeoff Power
3. Wings - Level
4. Accelerate out if stall condition.

Aborted Takeoff

1. Wheel Brakes - Apply
2. Thrust Levers – IDLE
3. Spoilers – EXT

Inadvertent Stow of Thrust Reverser After a Crew-Commanded Deployment

1. Maintain control with rudder, aileron, Nose-wheel steering, and brakes
2. Both TR Levers – Stow

Inadvertent Thrust Reverser Deployment During Takeoff

(Below V_1 Speed)

1. Wheel Brakes - Apply
2. Thrust Levers - IDLE
3. Spoiler – EXT

(Above V_1 Speed)

1. Rudder and Ailerons – As Required for Directional Control
2. Accelerate to V_R. Keep nose wheel on the runway.
3. Rotate at V_R; Climb at V_2.
4. Positive Rate of Climb Established – Gear Up
5. Clear of Obstacles - V_2+20, Flaps UP

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